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# Dakota Zephyr

South Dakota State College Extension Service, Brookings

*The Soil Is the Basis of Civilization; Destroy It And You Destroy All*

November 30, 1944

## Wagner Is Re-Elected State Head

Horace R. Wagner, Reliance, was re-elected president and Frank Feser, Amherst, vice-president of the South Dakota Association of Soil Conservation District Supervisors at their sixth annual meeting in Mitchell October 19 and 20. Other officers elected were Joe M. Heimer, Dupree treasurer and Leonard L. Ladd, Brookings, secretary.

The high light of the conference was the banquet address given by Governor M. Q. Sharpe. The governor discussed conservation from the standpoint of conserving soil, water, energy, plant, animal and human life and the conservation of thought and judgment. He brought the Missouri river program up to date by discussing the bills that have been introduced in congress, the reports that have been presented to the congressional committees and the further efforts of the Missouri river states committee.

The panel discussions offered an opportunity for the supervisors to express their ideas and exchange experience. This part of the program proved most valuable to all present.

### Contractor Heavy Jobs

Panel discussions were on such subjects as the use of contractor equipment, custom work, the duties and responsibilities of supervisors, the educational program and handling the business of a district. The discussions brought out the fact that more work can be done through contractors than if the district tried to do it all. However, there was a strong belief that the districts should own and operate some machinery and use contractors only for the heavier work.

The supervisors are the head of the district and should know what is going on in order to keep the work moving. They should inform the technician as to what work to do and where to do it and see to it that all of

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## Save Run-Off by More Terracing

Reliance, S. D.—American Creek District has done some experimental work this fall in terrace work to keep excessive runoff away from newly graded and seeded water ways.

In several instances three terraces were necessary on each slope on either side of the draw.

Efforts were made to find the relation of cost of this work to the AAA payment which can be earned by its completion. In some cases it has paid out, in others the cost was slightly more than the earning.

Conservation officials are hoping that the AAA will increase this payment next year or that necessary work of this nature can be more widely used because ditching in fields by erosion is increasing.

Four dam construction units are now at work in the district and more than 100 dams will have been completed or repaired by the time the ground freezes.

## Corn On Contour Checks-Run-Off

Webster, S. D.—Reduced soil erosion and additional water stored in the subsoil are two advantages of contour planting of corn experienced by Henry Sveum, Webster, S. D. He planted a small field of corn on the contour in 1943 and a larger one in 1944. Mr. Sveum said there was less soil erosion from flash rains before the corn had been cultivated. And after the corn had been cultivated, the only runoff was down the old dead furrows that had not filled in. And further, the additional water stored in the subsoil carried the corn over the dry period in August much better than the corn planted up and down hill.

Mr. Sveum added that this field planted much easier and with fewer short rows on the contour than when planted as rectangular field as there was a pothole about the middle on one side of the field.

## 4-H Club Boys Practice Conservation Plans

### 36 Districts

12 Million Acres

Recent creation of soil conservation districts in Brookings and Moody Counties brings the total to 36 organized districts in South Dakota. The land area is 12,882,378 acres. Latest additions were in Elm Creek-Middle (Hand county) Lawrence-Butte (Meade county) and the Hamill and Clearfield-Keyapaha districts in Tripp county.

So far this year 3,494,668 acres of land have been added to district total in approval of four new districts and fourteen additions to existing districts. All land in Tripp county is now within boundaries of an organized district. There are 10 such counties in the state. Others include: Clay, Minnehaha, Bon Homme, Sanborn, Jerauld, Codington, Roberts, Jackson and Fall River.

A referendum on a proposed addition to the Academy district, (Charles Mix) county, has been authorized by the state committee. Hearings have been held on addition of the balance of Day county to the existing district and also on a small area in Washabaugh county to the Jackson county district.

Supervisors in the Moody district include:

Nick Frantzen, Dell Rapids, S. D.  
Peter Ginsbach, Dell Rapids, S. D.  
A. A. Duncan, Egan, S. D.  
Fred Elhoff, Colman, S. D.  
Henry Schreff, Trent, S. D.

James Biggar, Aurora and Glen Felt, Brookings, were appointed supervisors in the Brookings county district and the election of the three other members will be held December 6.

*More than one third of South Dakota's farmers live within soil conservation districts. 25,000 farmers cannot be wrong.*

Elk Point, S. D.—Wayne Stoutenburg, 18, of Union County, has been returned a winner in the state 4-H soil conservation activity sectional contest and has been awarded a trip

to the club congress in Chicago. Wayne's soil conservation achievements on the 120 acre home farm include establishing contour pasture furrows on a hillside and grassed waterway in a ditch, setting out and caring for a farm windbreak and learning how to layout contour lines and then putting this knowledge into operation right at home. Wayne has been interested in soil conservation work since the organization of the local district and has helped his father set up and carry out the various practices.

Wayne started on his 4-H club career in 1939 and has carried both the swine and poultry projects and is junior leader of the poultry club.

Oscar Anderson, 20, whose home is on a hilly, 80 acre farm in Union County, has set up conservation practices on the home farm which made him the county winner in the 4-H soil conservation project.

Without technical aid, Oscar started conservation practices in 1943, which included planting corn around the hill, instead of up and down, discing and planting small grain around the hill, seeding brome grass on waterways to prevent gullyling and around springs in the pasture to keep down the weeds, throwing in brush dams to help heal old gullies and planting 25 Colorado blue spruce seedlings.

Even though the corn and grain were not planted on the true contour, it did prevent washing and excess runoff, the yields were better and the work was a lot easier on the old horses, Oscar revealed. And now he

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# Conservation Needs Are Increasing On South Dakota Farm Lands

The need for terraces on sloping cropland to supplement crop rotations, contour cultivations and other soil and moisture conservation practices has become apparent to an increasingly large number of farmers in several parts of South Dakota. But getting them built is a problem.

S. A. Nilson, Alcester, South Dakota, has demonstrated that terraces not only can be built by farmers with their own plows and farm tractors, but that it is not a hard job once they are staked out. This year he spent some time building terraces for a neighbor, using a one-way disc or wheatland plow and his rubber tired tractor.

L. P. Elsinger, Dell Rapids, is another South Dakotan who started building terraces this year with his farm equipment.

The method of building terraces with plows is to plow out on both sides of a strip, or island, on which the terrace is to be built. The island is 8 to 10 feet wide, and several rounds are plowed on each side of it.

Then, starting on the inside, the loose dirt is plowed. Each course made with the plow forces the loose dirt toward the center. This process is continued until the earth is moved to the center, in a gentle channel above.

Twenty or thirty rounds are required, according to the slope of the land, the rounds being divided into "courses." The first round in each step is the one nearest the center of the terrace. Each succeeding round is just outside of the preceding one.

The advantage of building terraces with one's own equipment is that the farmer does not depend on rented equipment which will be available at some specific time. Instead, he can do the job piecemeal as he gets time during his regular course of work. Nearly every farmer, even in the busy season, has an hour or two during which he can build terraces.

Late in September, the Soil Conservation Service men in central and southeastern South Dakota were instructed in building terraces with a plow at a farm near Alcester, so that they could show farmers whom they help to work out farm conservation plans how to do this job.

## 4-H Winners—

*Continued from Page 1*

is planning to cooperate with the district so that his land may be farmed in the true contour.

Wendell Nilson, a member of the Hawarden High School Future Farmers of America, has been selected as one of Iowa's boys to receive a special award for outstanding progress in his supervised farming program and for his plans for getting established in farming. Wendell's home is in Union County. He attended the Hawarden High School where he was graduated in 1943.

He is at present operating a 219 acre farm in Union County. All of the cropland is contoured and terraced and has grass waterways. He believes in conservation farming and is a district cooperator.

## Wagner Re-Elected—

*Continued from Page 1*

the needed practices are being carried out and that the work is distributed over the district. The supervisors are the custodians of the soil.

The business of the district is the supervisors responsibility and they should send out statements, collect and disburse moneys and keep accurate accounts.

So far as the general educational program is concerned, the Extension Service is responsible for that, but the supervisors have the duty of seeing that the people in the district understand the program. They should discuss the district at any kind of meetings held within the district, and conduct demonstrations and tours and show pictures of their outstanding activities. At the beginning of the year each district should lay out a program as a guide for the years activities.

Edgar Joy has the following to say on the subject of Creeping Jenny control: "Experience with rye-fallow indicated that an 80 to 95 percent kill of old creeper plants can be expected following a cycle of one season of summer fallow followed by winter grain, four or five cultivations after the grain is harvested and then another winter grain crop."

## Terracing Results In Gully Control

Chamberlain, S. D.—Terracing and gully control go hand in hand, cooperators of the Brule-Buffalo district have discovered. Neither alone is quite sufficient. Terraces must be provided with outlets for surplus water from heavy rains. Gullies that have been bladed in and seeded form grassed waterways and may be used as outlets for the terraces, thereby forming an excellent team. Over 150 acres of bladed-in gullies and grassed waterways were seeded during the fall of 1944 in the district. The work has been done by two contractors using motor patrols.

This practice is a part of the contour farming program and adds much to the effectiveness of ordinary contouring.

## Quack Grass Eradication Increases Yield On Field

Watertown, S. D.—Mr. Joe Mack, a farmer living two miles northeast of Watertown, says that he completely eradicated 12 acres of quack grass during the fall of 1943 and spring of 1944. In the fall he went over the field with the Seaman tiller, which he borrowed from the district supervisors. This tiller pulverizes and loosens the soil and spreads the quack grass roots on the surface where they are thoroughly dried. Later, just before the ground froze the field was worked with a quack digger. In the spring of 1944 it was again worked with the quack digger just before it was planted to potatoes.

Inspections during the summer indicated that the quack grass was completely eradicated. Mr. Mack also reports that this field produced 50 bushels more potatoes to the acre than other fields on his farm.

## Two Way Conservation Worked In Day County

Webster, S. D.—A simple arrangement has been worked out on a farm in Oak Gulch township in Day county, owned by J. F. Zimmerman of Chicago and farmed by Fred Wattier of Butler. Drainage was provided for an eight acre pothole and provision made to spread the water over a newly seeded field of bromus grass. A portion of the area draining into the pothole has been protected by contour tillage. This practice lengthens the rounds in plowing and also makes plowing much easier as it is always on the level. Any short rows are taken up in grass in the grassed waterway and new grass plantings on the highland that is the least productive.

## Jenny Rings Fight Pests For Farmer

Miller, S. D.—Art Hibbison, a farmer living two miles west of Miller, reports he has won the first round in his fight against Creeping Jenny in a badly infested 20-acre field of good, crop land. Through a weed ring established by the Elm Creek-Midland district, his field was given intensive tillage treatments throughout the summer and seeded to rye in September. By October, a promising stand of rye was secured with no jenny in sight.

Treatment was started the latter part of May and continued throughout the summer with "below-the-surface" duck-foot equipment, which cut the creeper stems from the deeper roots and kept the residue on top which provided excellent protection from blowing. Mr. Hibbison feels that by continually cutting off the new shoots from the underground roots so that no new plant food can be returned, the old roots will eventually be started out, although it may take two or three years to go the job.

## Flood Waters Diverted To Save Crops On Flat

Wessington Springs, S. D.—Delbert Shryock and Everett Linafelter, Jerauld county farmers, have each completed diversions which will prevent flood damage from waters that have previously been spreading over cultivated fields. The fields are flat and the water coming down from higher ground has stood on them and prevented timely planting or ruined the growing crops. The diversion consists of a ditch and dyke that will divert the water into natural channels onto adjacent grassland where it will do no damage.

## Gregory County Farmers Getting Gullies Filled

Burke, S. D.—Gregory county farmers, who are cooperating with the Soil Conservation district, now have the opportunity to get their gullies bladed in, especially those that have cut into their cropland. A contractor with a motor patrol grader is now operating in the area.

The gullies are bladed in to form a rounded channel which is then seeded to grass. The seeded area should then be mulched with straw, hay or manure to aid in preventing washing while the grass is being established.

## Conservation Saves Wild Life

By ELMER PETERSON, Director  
South Dakota Department of Game  
and Fish

It is the responsibility of the South Dakota Department of Game and Fish to administer or manage the wild life resources of the state, but any person or organization interested in a sound conservation of wild life management program, must of necessity, also be interested in sound land use practices. Since a successful program of wild life management depends on proper land use, the two are more closely related than the average person, perhaps, realizes.

In any sound program of wild life management it is necessary that we have food and cover, and to have food and cover we must have soil and water. Winter cover is important, particularly for our bird life and, it may be stated, that this same cover often times provides food.

It occurs to us that true conservation is the building of a better out of doors; a better place in which to live. Hunting and fishing do not constitute the reason for practicing a sound conservation or wild life management program but these come as a result of sound conservation practices.

Conservation does not mean only that we should preserve and protect our wild life resources, but it should also include the reasonable and proper use of these resources. The future of our wild life resources and our out-of-doors, in general, depends upon the intelligent activity and leadership of individual citizens in every community.

Strip cropping, revegetation of gullies and stream banks and the impounding of runoff waters constitute a part of the program, with which we are all well acquainted, and all of these practices have shown splendid results.

Strip cropping results in an immediate increase in the bird population on that area. The revegetation of stream banks, gullies, and woodlands furnishes cover for wild life, and this same cover furnishes food and nesting habitat for bird life.

The impounding of runoff waters not only furnishes water for domestic live stock, but furnishes habitat for fish, and you will find that birds in large numbers gather in the vicinity.

The shelter belts, which have sprung up over the state during the past few years, furnish conclusive evidence of their value to our bird life and particularly song and insectivorous birds.

In carrying out our educational program, we aim to stress the import-

## Contour Farming Plus Terracing Answers Problem

Chamberlain, S. D.—Many of the cooperators with the Brule-Buffalo Soil Conservation district who have been farming on the contour have reported very satisfactory results. However, they are now beginning to see need of some additional practice to take care of those heavy flash rains to prevent them from breaking over the contour lines.

Terraces will be the answer. But before terraces can be used to advantage, outlets must first be established.

For this reason the supervisors of the Brule-Buffalo District contracted with two patrol operators to blade in the gullies which have occurred during recent years. These gullies are then being seeded to grass to be used as grassed waterways as outlets for the terraces. Much of this work has been done to date and these farms should be ready for terracing in the near future. To date the technicians have reported approximately 150 acres of these waterways established.

This work is also being done in some fields where terracing would not be practical but it is felt that it is still a good practice because it does away with severe gullying in fields which are hazardous for cattle and machinery as well as breeding places for weeds. It is planned to continue this work next year to serve those cooperators who were unable to prepare their fields this year, because of lack of time.

### Broadbase Terracing Aids Water Spreading

Wessington Springs, S. D.—Mr. Roy Eagle, of Wessington Springs, aided by the conservation district engineer, has located and staked out an absorptive type broadbase terrace which he will build this fall. This terrace will prevent water from filling several small sloughs and yet will keep the water on the land. Mr. Eagle will be able to farm over this terrace and through the areas formerly too wet to cross.

ance of supporting such a program in South Dakota in order to improve the land upon which we live and to correct the abuses of the past.

In order to carry out such a program it is necessary that we "think conservation"—not only soil and water conservation, but the conservation of wild life and other incidental products of the land. Such a program calls for the cooperation and whole hearted interest and effort of every person who has the well being of our Country and our people at heart.

## Horticultural Work At Spearfish, S. D. in 1944

By EDWARD O. OLSON  
*S. D. State College Horticulture Department*

The Spearfish cooperative garden demonstration and experiment project conducted during the year showed some important results and revealed information of value not only to the Black Hills area but to other areas in the state now under irrigation or to be brought under irrigation. Gardeners in the area have difficulties caused by insects, soil problems and improper cultural practices.

Two insects are major problems in this area: the flea beetle and the Mexican bean beetle. On demonstrations conducted on radishes, the most effective dust tested for the flea beetle control was rotenone, probably of one percent strength. Wood ashes are of little value, while cryolite, pyrocide and a twenty-five hundredths percent rotenone were less effective than a one percent rotenone.

Replicated experiments on the use of sprays and dusts to control the Mexican bean beetle attacks on green beans also showed great differences in the effectiveness of various insecticides. These insecticides were applied under the leaves by a hand sprayer and a hand duster of the types available to home gardeners. These trials indicated that while the adult beetle is difficult to control, the larvae which causes most of the damage can be controlled. The use of rotenone or cryolite as a spray or dust before the pods begin to form, followed by rotenone treatments, controlled the larvae of the bean beetles. Pyrocide, like rotenone, can be sprayed or dusted on the beans after the pods form because these insecticides are not harmful to men. This is not true of the other insecticides used. If the beans are dusted with pyrocide, it appears that more frequent dusting will be required than if rotenone is used. In these trials, the use of paris green, lead arsenate and calcium arsenate resulted in lower yields of green beans than did the use of rotenone or cryolite as sprays or dusts before the pods begin to form. Bean foliage is easily burned by most arsenical sprays. The highest yielding plots at Spearfish were sprayed with a combination of rotenone and bordeaux mixture.

Another major problem has been the foliage yellowing caused by the inability of certain plants to obtain iron from the soil. These plants include the strawberry, raspberry, phlox, soft maple and some fruit trees. The application of a spray, composed of one-half ounce of ferrous

sulfate added to one gallon water, caused these yellow leaves to turn green. The spraying of the foliage is the only a temporary remedy, but further studies are now in progress.

Results of experimental trials indicated that growth and early yield of tomatoes can be stimulated by the use of complete fertilizers applied as starter solutions. A typical starter solution would consist of one pound of a 4-12-4 fertilizer added to 5 gallons of water. Half a teacup of this solution is applied to the soil around the tomatoes after transplanting.

Based on the experience of commercial potato growers, many home gardeners in the Black Hills probably get higher yields of potatoes by planting them around June 20, rather than on Good Friday, as is so often done in the eastern part of the state. Early planted potatoes are more subject to psyllid and flea beetle damage and, under irrigated conditions, water is not the limiting factor that it often is in the eastern and central part of South Dakota. Early potatoes can be grown under irrigation in the Black Hills area but a spray program to control psyllids, flea beetles and certain diseases must be followed for successful production most years.

Various methods of applying water to garden crops were demonstrated in cooperation with the Soil Conservation Service. The use of portable pipe to sprinkle water on strawberries has possibilities in the Black Hills area because the use of mulching material makes furrow irrigation difficult to handle. Strawberries mulched with straw produce cleaner fruit and can be more conveniently mulched with straw for winter protection.

Many other horticultural problems are appearing in the Black Hills and the West river area, but the experiments described and others in progress represent the combined efforts of the extension service, experiment station and the Soil Conservation Service to assist the home and market gardener in the production of greater yields on irrigated land.

Did you know that there were 10 weed control rings working on Creeping Jenny control in South Dakota this year? The average acreage in each region was about 138 acres. That acreage could be increased if jenny patches were larger and closer together.

## Finds Contouring No Inconvenience

Canton, S. D.—In his search for a method of farming which calls for the least loss of soil fertility, and yet one which can be carried on with no inconvenience, Philip Evanson turned this year to contour farming as the system most likely to yield results.

This veteran Lincoln county farmer, whose farm is divided by the Eden and Norway township lines, has been interested for years in conservation measures, resulting, he says, from his observation of the annual losses from soil erosion which occur on the rolling land in his locality.

He believes, that the losses from soil erosion are as great in dry years as in seasons of more abundant rainfall and he cites as his reason for this belief the fact that the loose soil in dry years washes more easily. Contour farming was not a new experience for this farm owner when it was introduced on his farm this past spring, his first experience being acquired in 1943 when a son-in-law contoured a field of corn.

Judson Evanson, a son, who lives on the home farm, husked this corn with a mechanical picker and he relates that, contrary to a previous belief, he found it easier to operate the picker along the level rows of the contoured field than in fields in the up-hill-and-down fashion.

There was likewise, he tells, an absence of washed out gullies between the rows in the contoured field to retard the operations of the picker such as he encountered in fields where the rows run up and down the hill.

*Grass once grew on steep slopes that are now washing. You can help it grow there again.*

## Beadle Farmer Endorses Subsurface Tillage Plan

Huron, S. D.—A tillage demonstration, begun on the C. W. Lemke farm in the old Wolsey-Shue Creek soil conservation demonstration project near Huron, nearly a decade ago, has led Lemke to decide to use subsurface tillage on his cropland when the necessary equipment can be bought.

Yields over the long-time period, Lemke said, favor plowing of land by a small margin. But the other benefits of stubble-mulching override this advantage in his judgment. These are cheapness of operation, control of soil blowing and moisture conservation.

One development, he pointed out, is that all yields on the demonstration field-subsurface tilled, disked and plowed—are somewhat above the average. This seems to indicate the benefits of the crop rotation which has been used.

Lemke has carried out the demonstration in cooperation with the Soil Conservation Service. The field was divided into three strips, one strip subsurface tilled, one disked to keep some of the crop residues on the surface and the third strip plowed. The same tillage has been practiced on each strip throughout the demonstration.

Lemke planted the whole field as one and each strip was harvested separately, so that yields could be compared. A systematic crop rotation was followed in the field. It was part of a field demonstration of some of the practices necessary for the establishment of practical farm conservation plans in that area.

Although the production for the period is a little higher on the plowed land, the difference is not regarded as enough to be significant.

## All of Tripp County Now In Soil District

Referendum results on the proposed additions to the Clearfield-Keyapaha and Hamill Soil Conservation districts in Tripp county as reported by M. L. Warne, County Extension Agent, show a favorable referendum for both districts.

In the Clearfield-Keyapaha district there were 430 favorable votes and 38 against, leaving a favorable margin of 92 percent. Over 70 per cent of the land was represented by vote in the referendum. This addition included 12 townships consisting of 268,793.65 acres.

In the Hamill district there were 421 favorable votes and 37 against, leaving a favorable margin of 92 percent and 74 per cent of the land was represented by vote. This addition included 17 townships consisting of 378,725.54 acres.

The referendum results have been approved by the state committee, which means that all of the land in Tripp county is within the boundaries of the soil conservation district, making the 10th county in the state that is wholly within districts.

### Conservation farming saves soil.

*Grasses bind the soil. Why not grass erosive soils?*

*Grass is the cheapest feed one can raise. Plant more grass.*

*Man and weeds cannot both live on the same land. Who is boss, you or the weeds?*

*Todays contours pay dividends tomorrow. Tomorrows contours pay dividends a year later.*

## Day County Farmer Sold On Contouring

Webster, S. D.—The plowing of guide lines on a field in the fall of 1942 sold Hans Johnson, Day county farmer, on contour farming. Even though this field was not farmed on the contour in 1943 favorable results were obtained along the area where the guide line was located as the back furrow made in plowing out the line definitely held water on the slope. More guide lines were laid out in the fall of 1943 and in 1944.

Mr. Johnson made four observations: First, the runoff was decidedly checked and moisture stored in the soil. Second, the soil did not wash. Third, farming on the contour on this particular field did not take more time and will really take less time than working up and down hill, though at first it seems to take more time, the field is finished rapidly at the last. And fourth, there was an increase in yield of from 15 to 20 per cent.

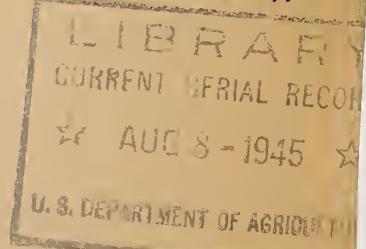
## Straightens Out Irrigation Ditch

Spearfish, S. D.—Walter Cunningham, of the Lawrence-Butte county district, straightened one irrigation ditch and gained seven acres of land that the old ditch would not irrigate. The old ditch was so crooked and so located that irrigation from it was difficult, Mr. Cunningham revealed. There were also some high spots in front of the ditch.

The high spots were removed and the soil from them and from straightening the ditch was filled into low spots so that seven acres more ground could be irrigated without extending the length of the ditch.

*One district this year contoured more than 8,000 acres.*

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The DAKOTA ZEPHYR is devoted to telling the story of successful soil conservation practices on many South Dakota farms.

We think you will find them interesting. Perhaps some of them may be applied to your farm.

If interested in setting up one of these practices on your farm, contact your county extension agent. He will be glad to help you get started.

LEONARD L. LADD  
Extension Soil Conservationist

Harold Taylor  
Smith-Hughes Teacher